

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

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**FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY**

In the Matter of	)	
	)	
Review of Part 15 and other Parts of the	)	ET Docket 01-278 /
Commission's Rules	)	RM-9375
	)	RM-10051

**Comments of Johnson Controls, Inc.**

Johnson Controls, Inc. ("JCI") by its attorneys, hereby files comments in the above-captioned proceeding. JCI manufactures radio frequency devices regulated under Part 15 of the Commission's rules and will be directly affected by the outcome of this proceeding. JCI supports the Commission's proposal to amend Section 15.231(a) of the Commission's rules to remove the restriction against the transmission of data. In addition, JCI urges other modifications and clarifications to Section 15.231 and other Commission proposals so that the Commission's rules will be better able to accommodate new services made possible by changing technologies.

JCI is a world-wide manufacturer of automotive systems and facility management and control systems, including building automation technology. JCI also produces wireless control devices for homes and businesses and wireless products for automobiles. JCI's programmable Homelink transmitters, available as a manufacturer – installed feature on over 120 models of automobiles sold in the United States, provide wireless links between automobiles and home control systems that can be used to activate garage door openers, entry gates, door locks, security systems, home and office lighting and small appliances. Its list of wireless automotive products includes tire pressure monitors and hands-free mobile telephone equipment.

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## Transmission of Data

JCI supports the Commission's proposal to remove the restrictions on data, video and voice transmissions under Section 15.231(a). Under the present rules, although a device may transmit "recognition codes" (which are, of course, a form of data) along with permitted control signals, other information, including information that may relate to the proper functioning of the device or that may be useful to the operator of the device may not be transmitted unless in the form of periodic transmissions. See Section 15.231(e). This situation has led to the imaginative use of "recognition codes," often at extra cost, in an attempt to improve the utility of wireless control devices. A form of lore has been created where it is understood by some that certain types of "information laden" transmissions will be permitted, while others are not. Similarly, periodic polling transmissions to report "system integrity" are permitted under Section 15.231(a)(3) and this term, as well has been interpreted broadly to include the transmission of data required to calibrate systems, report on battery conditions, or indicate whether a device has been tampered with, but again, not the transmission of substantive information. Over the years there have been no published items interpreting Section 15.231, only scattered letters, most of which are no longer accessible, informal telephone conversations with the staff, and some recent information available on the Laboratory website. Amending Section 15.231 to remove the restriction on data transmissions will go a long way to clearing up confusion as well as permitting the use of devices made "smarter" by their ability to transmit needed and useful data.

## History

In 1981, the Commission adopted old Sections 15.201 and 15.122, the forerunners of present Section 15.231(a) and (e), respectively. Section 15.201, like Section 15.231(a), provided for the operation of control devices, did not permit their continuous operation, regulated manual and automatic operation, and prohibited operation of voice and data transmissions at regular intervals except to determine system integrity pursuant to a specified polling rate or duty cycle.

Section 15.122, like Section 15.231(e) permitted a faster duty cycle, but at a lower power. It did not apply to manual and automatic operation because its only purpose was to permit a greater duty cycle.

In 1989, Sections 15.201 and 15.122 were combined into Section 15.231(a) and (e). The provisions of old Section 15.201 remained largely intact, except that video was added as another form of prohibited transmission. But in its new incarnation as Section 15.231(e), Section 15.122 was slightly changed. Section 15.231(e) preserves the old tradeoff between power and polling rate. It begins, “[i]ntentional radiators may operate at a periodic rate exceeding that specified in paragraph (a) of this section...” but it continues, “and may be employed for any type of operation, including operation prohibited in paragraph (a) of this section...” And subsection (a) was dutifully amended in turn to note that its provisions applied, “[e]xcept as provided in paragraph (e).”

Clearly, therefore, subsection (e) represented more than the old tradeoff between power and polling rate -- now it also permitted whatever was otherwise prohibited in subsection (a). And this is where the confusion in interpreting subsection (e) began. While data, voice and video were now permitted under (e), that subsection’s duty cycle, intended for regulating polling transmissions, did not reasonably apply. This problem led some to conclude that, since subsections (a) and (e) now had to be read together, the manual and automatic transmission restrictions of subsection (a) had to apply to data, voice and video transmissions in order to provide some regulatory brake on these activities. This problem was never addressed by the Commission. The present proposal to remove the restriction on transmission of data, voice and video from subsection (a) now resolves the ambiguity and subsection (e) may revert to use as the Commission originally intended – for polling at lower power with a greater duty cycle.

### Alarm Conditions

Section 15.231(e), while permitting data transmissions, contains no special provision for alarm-mode operation. In the past, the staff has suggested that operation in

alarm mode is permitted only in subsection (a) and a device that otherwise transmits under (e) can simply be considered to be operating under (a) when in alarm mode. But data transmission, which may quite reasonably be part of the transmission under (e) may not occur under (a), even in alarm mode. Assuming the Commission adopts its proposal to remove the restriction on the transmission of data under (a), this problem will be solved. An alarm containing data may then be transmitted under subsection (a). Left unanswered, however, is the issue of what constitutes an emergency and when a device may go into alarm mode.

JCI believes that the rules' definition of alarm mode, "emergencies involving fire, security, and safety of life," is too restrictive and requires clarification. With data transmission permitted under subsection (a), the issue then becomes not the length of the duty cycle, but which conditions may reasonably be considered related to safety of life. Transmitters can and should be used to call attention to many situations that do not fall under a strict "safety of life" concept. An alert that machinery or technical systems are not functioning efficiently or as intended can be used to save maintenance costs and avoid costly replacement. Devices that warn when some condition such as temperature or pressure is abnormal can safeguard property and potentially result in savings of millions of dollars. A characteristic of such devices would be that they would only exceed the normal duty cycle on a very infrequent basis, thus posing little threat of interference to other spectrum users.

As is the case with so many Commission rules, Section 15.231 was enacted in response to specific requests for equipment applications and is therefore restrictive with regard to other applications. Alarm conditions, as originally envisioned, were related to safety of life because the rules were developed at the behest of the security and alarm industry. More globally, however, an alarm condition should not only be related to safety of life, but to any emergency justifying a transmission that continues until the emergency is over.

JCI requests therefore that the Commission reevaluate its policy of permitting more rapid duty cycles or continuous operation only during emergencies involving fire, security or safety of life by instead permitting a duty cycle appropriate for the purpose for which it is intended. Where a more rapid duty cycle is reasonably needed in order to measure some parameter or report on changing conditions which might endanger property, machinery or the operation of systems, the rules should be sufficiently flexible to permit it.

### Manual and Automatic Operation

Section 15.231(a)(1) and (2), require that control devices manually or automatically activated, must automatically cease transmission within five seconds. This rule, which in one guise or another has been quietly in effect for decades, is now hoary with age. The five second rule is simply a rule of convenience. It is designed to prevent the continuous operation of transmitters under Section 15.231. There could have been just as much justification for a 4 second rule or a 12 second rule. JCI is contemplating the manufacture of devices that will require more than five seconds – approximately ten seconds - of transmission time to operate effectively. JCI appreciates that, apart from its own requirements, any number chosen is inherently arbitrary. And there is a possibility that if a longer transmission time is permitted, devices will be designed to take advantage of that time whether they need it or not, and this is not what the Commission should encourage. However, where a manufacturer can show that, in order to function as intended, a transmitter needs greater transmission time, the Commission should have the policy of reasonably accommodating the manufacturer. JCI requests, therefore, that the Commission state such a policy at the conclusion of this proceeding in order to give manufacturers the design flexibility they need. In the interim, JCI believes that the Office of Engineering and Technology should have authority to waive Section 15.231(a)(1) and (2) at its discretion.

## Operation of RF Devices in the 425-435 MHz Band Under Proposed Section 15.240

In response to a petition from SAVI Technology, Inc. (“SAVI”), the Commission has proposed to adopt a new section – Section 15.240 – that would permit the exchange of data between devices. The proposal would permit transmissions at the same field strength permitted under Section 15.231(a) and be limited to transmissions of 120 seconds with at least a 10 second silent period between transmissions. The SAVI petition was intended to permit Radio Frequency Identification Systems (“RFID”) tag readers to accumulate a greater amount of information in a shorter time. JCI certainly supports the Commission’s proposal, as far as it goes. There is little reason, however, why operation under proposed Section 15.240 should be limited only to tag readers. The proposed rule operation is restricted to devices that “locate and identify” devices and “exchange data.” JCI submits that the Section 15.240 might reasonably apply to any exchange of data between fixed sources or fixed and mobile sources. One example might be to permit interrogation of a device in order to obtain data on the proper functioning of its systems, thereby eliminating wired connections and making such information more accessible to consumers. The increased transmission time under proposed Section 15.240 would make such activity possible. At the same time, this time limit and the requirement for at least a 10 second silent period between transmissions certainly insures that systems operating under proposed Section 15.240 could not be used for more widespread communications activities such as internet access. Thus the wider application of the proposal that JCI is suggesting could be permitted without concern that the Commission might be opening the proverbial door to clearly prohibited activities.

RFID devices are not the only products that can benefit from the Commission’s proposal. It would be unfortunate if a new rule were too restrictive from its inception. JCI urges the Commission, therefore, to broaden its application of proposed Section 15.240 as explained above in order to permit any exchange between sources, at least one of which is fixed.

## Conclusion

JCI supports the Commission's proposals to permit data, voice and video transmissions under Section 15.231(a) and to create a new Section 15.240 for the exchange of data. It is important, however, for the Commission to take this opportunity to review its proposals in the context of new applications that can service the public. The rules must either be clarified to permit these new applications or the staff be given explicit authority to permit them on a case-by-case basis without the administrative delays involved in formal waiver or even rulemaking petitions. Permitting data transmissions is certainly an idea whose time has come. So too would be recognizing that the concept of alarm mode should be extended to safety of property and systems. New and more sophisticated devices make the monitoring of equipment and machinery possible and inexpensive. Their use could save considerable sums in repair and replacement costs. An old rule, designed for other applications, should not prohibit their introduction.

Similarly, the Commission should recognize that the explosion of digital technology has created the possibility for control devices that never could have existed in the past. Some of these devices might require "on time" in excess of the old five second rule in order to accomplish their intended purpose. The Commission should use this proceeding to inject sufficient flexibility into Section 15.231 in order to permit a new generation of devices.

The Commission also has the opportunity, with its proposal to enact new Section 15.240, to plan for the future, rather than simply satisfying the needs of one small group of users. Section 15.240 should not be limited to RFID devices, but rather should permit

operation of any devices intended for the exchange of data over a greater time than presently permitted. As newer applications of technology are developed, the Commission's rules should be able to accommodate them. Acting now to make new Section 15.240 more inclusive will surely prevent the necessity for additional proceedings in the future.

Respectfully Submitted,  
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